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## **COLLECTION AND TRANSPORT OF LABORATORY SPECIMENS**

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## **COLLECTION AND TRANSPORT OF LABORATORY SPECIMENS**

### **Procedures for Specimen Collection and Transport**

**Laboratory results for your residents are contingent on the quality of the sample taken and proper adherence to transport directions. Poorly collected or transported specimens will lead to improper or delayed treatment for your resident.**

**It is imperative that your contract laboratory provides your facility with complete guidelines for proper collection and transport of specimens. These guidelines must be available and used by all the professional staff in your facility.**

#### **Safety Considerations**

- Follow OSHA bloodborne standards. Observe Universal Precautions or BSP guidelines when collecting patient specimens. Treating all specimens as potentially hazardous eliminates the need for special considerations or warning labels.
- Do not contaminate the external surface of the collection/transport device or the accompanying paperwork.
- Minimize direct handling of the specimen from the resident to the laboratory by utilizing transport systems, such as sealable plastic bags, provided by your laboratory.

#### **General Recommendations**

- Consult with contract laboratory for specific collection procedures and devices, holding, and transport requirements.
- Obtain cultures prior to initiation of antibiotic therapy OR after residents or personnel have been off antibiotics at least 48 hours, preferably longer.
- **Every specimen submitted to a laboratory must be labeled with at least the patient name, source of specimen (specific site of specimen), date, and time of collection of specimen.** In addition, completely fill out the test request form. The name on the specimen must match the name on the request form. Include any specific requests/organisms the laboratory is to test for.
- Utilize sterile equipment and aseptic technique to minimize contamination with normal flora. When a specimen is to be collected through intact skin, cleanse the skin first. Cleanse the puncture site with alcohol followed by iodine which is allowed to dry and then wiped off with alcohol. Do not palpate this site following antiseptic cleansing.

## **INFECTION CONTROL GUIDELINES FOR LONG TERM CARE FACILITIES**

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- Collect adequate amounts of the specimen to eliminate false negative results.
- Select the correct anatomic site from which to obtain the specimen and use the proper supplies and technique to collect the specimen. If in doubt, consult the laboratory or their manual for proper technique, and transport container. The following are some suggested site-specific recommendations. Do not follow them if they are in conflict with your laboratory instructions.
  1. Routine Nasal Culture—Culture the anterior nares only. One swab may be used for both nares. If the swab is moistened with sterile nonbacteriostatic saline, gently roll the swab for 2-3 seconds over the area to be cultured. If swab is dry, rub area more vigorously. Place swab in culturette container and crush ampoule of transport media to ensure the swab stays wet. Do not refrigerate swab.
  2. Throat Culture—Instruct resident to breathe through his/her mouth as this will lessen gagging. Utilizing a tongue blade and sterile swab, sample the back of the throat between and around the tonsillar area including any white or inflamed areas. Avoid cheeks, teeth, etc. In general, swabs for viral culture should be refrigerated if delay in transport is anticipated.
  3. Nasopharyngeal Culture—A nasopharyngeal wire swab should be passed along the floor of the nose posteriorly until it contacts the posterior pharyngeal wall. This should be accomplished with the neck in an extended position. The swab should be rotated several times and removed. **It should be placed in an appropriate transport container/conveyance and delivered, as instructed, to the laboratory.** (Transport media is only appropriate for bacterial cultures.)
  4. Skin—Consult your laboratory manual for complete directions when performing skin scrapings to test for scabies. How to perform skin scraping is also outlined in "Guidelines for Scabies Prevention and Control," Appendix J. Specimens of skin, hair or nails for fungal culture can be submitted in a sterile, screw cap container.
  5. Sputum—A first morning, deep cough is recommended. Attempt to minimize contamination with saliva. Have resident brush teeth and gargle prior to collection. Remove dentures.
  6. Ear—Best results will be obtained if the ear is actually draining. Gently rotate swab in affected ear.
  7. Eye—Swabs for culture should be taken prior to application of topical antibiotics. Sample both eyes by rolling separate swabs premoistened with sterile nonbacteriostatic saline over each conjunctiva.

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8. Wounds and Abscesses—Tissue or fluid obtained from a site are superior to swab specimens.
  - Surface Wounds: When collecting surface wound cultures, first wipe off superficial drainage with sterile saline moistened gauze then sample the depths or leading edge with a swab. **Avoid** areas where healing has occurred. If necessary, open the lesion and express exudate onto a sterile swab. If a sinus tract is to be cultured, collect specimen as close to the base of the tract as possible. The tract opening should be wiped with a suitable antiseptic such as alcohol and allowed to dry. Remove accumulated purulent drainage from the tract using sterile saline soaked 4 x 4 dressing.
  - Deep Wounds: Deep wounds may contain anaerobic organisms that require special transport conditions. Consult your laboratory manual for appropriate collection of a deep wound sample. Anaerobic organisms will not survive in routine culturettes.
  - Abscesses: Use a needle and syringe to aspirate the fluid. Consult your laboratory manual for special transport conditions. Specimens collected by needle aspirate should be transported to a sterile container or appropriate transport vial and the needle and syringe disposed in compliance with OSHA requirements. When there is little material, a small amount of sterile saline can be drawn into the syringe prior to transferring the specimen to a sterile container. Never transport a specimen in a syringe without removing the needle. If transfer to another container will compromise the specimen, remove and properly dispose of the needle, and cap the syringe with a sterile cap prior to transporting the specimen to the laboratory.
9. Urine—All urine specimens, clean, voided or catheterized must be collected in a sterile container or urine transport tube. Early morning, clean voided specimens are best. When collecting a urine specimen from a catheterized patient, collect the urine from the catheter line. Do not culture Foley catheter tips. If urine cannot be transported to the laboratory immediately, it may be held in the refrigerator for up to four hours or placed in a urine transport tube with preservative. Urine specimens that do not adhere to transport times and conditions will provide compromised results and may be rejected by your laboratory as unsatisfactory for testing. The **date** and **time** of collection are required on urine specimens.
10. Feces—Antibiotics, barium, and mineral oil are toxic to bacteria so stool specimens need to be obtained prior to their administration. Collect liquid or semi-liquid stool whenever possible. Collect in a clean or sanitized bedpan. Do not contaminate the feces with urine. **If infecting organism is unknown (i.e., an outbreak), collect two specimens.** One specimen for bacterial testing, which is placed in transport media, and one for viral testing, **NOT** placed in transport media. Fecal specimens must be

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placed in different collection vials depending on the suspected infecting organism. Feces for some viruses and bacteria must be collected without transport media. Feces for most common enteric parasites must be placed in a special transport media. **Transport containers for bacteria and parasites are NOT interchangeable.** Consult your laboratory manual for appropriate transport conditions.

A single negative stool culture or examination for ova and parasites cannot be accepted as sufficient to disregard a particular gastrointestinal pathogen as a potential cause of illness. Most infectious diarrheas will be diagnosed with careful and extensive evaluation of three stool specimens. Demonstrations of toxins: immunologic or cytologic methods are the preferred proof that *Clostridium difficile* is the observed clinical disease. Follow the laboratory's instructions for *C. difficile* toxin specimen collection.

11. Rectal Swabs— Swab should be inserted just inside the anus and rotated with firm pressure. On withdrawal it should be placed in a screw cap tube containing a preservative such as Cary Blair media. Rectal swabs are **not recommended** for detecting asymptomatic carriers of *Salmonella*, *Shigella* or *Campylobacter*. Swabs are **not acceptable** for ova and parasites.
12. Blood—**The laboratory should provide the facility with commercial collection kits and blood culture bottles. Follow collection and transport directions very carefully.** The specimen should be taken when the patient's temperature is on the rise. Blood cultures are to be drawn at least one half hour apart with a total of three cultures in 24 hours. The specimens must be labeled with collection times, date and the patient's name.

**Suggested Steps for Obtaining Blood Cultures:** (Please consult and follow your own laboratory-specific instructions.) Obtain supplies. Wash hands for one full minute using an antiseptic soap. Wipe hands with alcohol swab.

- Apply tourniquet and select venipuncture site, then release tourniquet.
- Arrange sterile gloves and prep materials on a sterile field.
- Degrease the site using 70% isopropyl alcohol, rubbing in concentric circles starting at the center and moving outward, applying firm but even pressure.
- Prep the venipuncture site with 2% tincture of iodine (preferred) or povidone iodine in concentric circles, allowing the iodine solution to remain for 60 seconds. Prep the tops of the blood culture bottles, also, using fresh iodine preps.
- Use 70% isopropyl alcohol to remove the excess iodine from the venipuncture sites and tops of the bottle(s).
- Allow the alcohol to dry.
- Apply the tourniquet, then don sterile gloves, palpate the vein and draw approximately 10 to 20 ml of blood with a syringe and needle.

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- Use alternate arms for more than two blood culture collections.
- Divide 10-20 mls evenly between bottle and unvented thiol bottle.
- Transport to the laboratory immediately. **DO NOT REFRIGERATE.**

13. Intravascular (IV) Catheter Specimens— Intravascular (IV) catheters are an important potential source of bacteremia and fungemia as well as local infectious complications at sites of catheter insertion. Quantitative culturing of catheter tips is useful in assessing the relationship between catheters and sepsis. A positive catheter tip culture alone is not indicative of an IV related infection. Correlation of these results must be made with both blood cultures and the patient's clinical picture.

Procedure for obtaining a catheter tip culture:

- Obtain supplies and wash hands.
  - Cleanse skin around catheter site with alcohol.
  - Don sterile gloves and aseptically remove the catheter. With sterile scissors, clip 5 cm of the distal tip of the catheter and put directly into a sterile tube. Do not place in liquid media.
  - Transport to the laboratory immediately.
- If the physician orders anaerobic cultures, consult your laboratory for instructions. **Specimens likely to contain anaerobic bacteria must be collected and placed in an anaerobic device capable of maintaining the viability of anaerobes. DO NOT REFRIGERATE.**
  - All specimens must be promptly transported to the laboratory. Consult laboratory for specifics in storage requirements of specimens prior to transport.

**REMEMER: Close attention to your laboratory's instructions for collecting and transporting laboratory specimens will insure that your patient receives a rapid and accurate result.**

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